

Claims:

1. A method of analysing a sample, comprising:
combusting the sample in a combustion chamber (2) to
5 produce combustion products;
collecting the combustion products from the combustion
chamber (2) into a reservoir (15);
providing the combustion products from the reservoir
(15) to a measuring chamber (16,30); and
10 measuring at least one property of the combustion
products in the measuring chamber (16,30).
2. The method according to Claim 1, wherein the reservoir
(15) is connected by a first connection (11) to the
15 combustion chamber (2) and is connected by a second
connection (14) to the measuring chamber (16, 30),
comprising shutting off the second connection (14) to the
measuring chamber (16, 30) during the collection of the
combustion products and shutting off the first connection
20 (11) to the combustion chamber (2) during the feeding of
the combustion products to the measuring chamber (16, 30).
3. The method according to Claim 1 or 2, wherein the
speed with which the combustion products collected in the
25 reservoir (15) are fed to the measuring chamber (16, 30) is
higher than the speed with which the combustion products
are removed from the combustion chamber to the reservoir
(15).
- 30 4. The method according to any one of the preceding
claims, wherein the combustion products are collected in
the measuring chamber (16, 30) under pressure.

5. The method according to Claim 4, wherein the measuring chamber (16, 30) has a discharge line (18) for removing combustion products, further comprising shutting off the discharge line (18) during the feeding of the combustion products to the measuring chamber (16, 30).

6. The method according to any one of the preceding claims, wherein the sample is substantially completely burnt in the combustion chamber (2) and substantially all the combustion products formed are collected in the reservoir (15).

7. The method according to any one of the preceding claims, comprising the conditioning of the combustion products between combustion in the combustion chamber (2) and measurement in the measuring chamber (16, 30).

8. The method according to Claim 7, wherein the conditioning comprises drying the combustion products.

9. The method according to any preceding claim, wherein the combustion products are collected into the reservoir (15) while the sample is being combusted.

10. The method according to any preceding claim, wherein the combustion products are provided to the measuring chamber (16,30) once substantially all of the combustion products have been collected into the reservoir (15).

11. An analysis device for analysing a sample, the device comprising:

a combustion chamber (2) arranged to combust the sample to produce combustion products;

5 a reservoir (15) downstream of the combustion chamber (2) and arranged to collect the combustion products from the combustion chamber (2);

a measuring chamber (16,30) downstream of the reservoir (15) and arranged to receive the combustion
10 products from the reservoir (15) and to measure at least one property of the combustion products.

12. The analysis device according to claim 11, wherein the combustion chamber (2) has an inlet opening (3) for feeding
15 the sample and has an outlet opening (5) for removing the combustion products.

13. The analysis device according to claim 12, wherein the measuring chamber (16, 30) is connected to the outlet
20 opening (5) of the combustion chamber (2) and the reservoir (15) is connected by a first connection (11) to the combustion chamber (2) and is connected by a second connection (14) to the measuring chamber (16, 30).

25 14. The analysis device according to any of claims 11 to 13, wherein the measuring chamber (16, 30) has measurement means for measuring the at least one property of the combustion products.

30 15. The analysis device according to either claim 13 or 14, wherein shut-off means (10) are provided for shutting off the second connection (14) to the measuring chamber

(16, 30) during the collection of the combustion products and shutting off the first connection (11) to the combustion chamber (2) during the feeding of the combustion products to the measuring chamber (16, 30).

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16. The analysis device according to claim 15, wherein the shut-off means comprises a three-way stopcock (10) that is connected to the first and second connection (11, 14).

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17. The analysis device according to any one of Claims 11 to 16, wherein the measuring chamber (16, 30) has a discharge line (18) for removing combustion products, which discharge line (18) can be shut off by a valve (19).

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18. The analysis device according to any one of Claims 11 to 17, wherein the reservoir (15) comprises a cylinder (20) in which a piston (21) is movably incorporated.

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19. The analysis device according to Claim 18, wherein the cylinder (20) comprises two chambers (23, 24) separated by the movable piston (21), wherein one of the chambers forms a filling space (23) for the collection of the combustion products and the piston (21) can be energized by a stepping motor in one direction to force the combustion products out of the filling chamber (23).

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20. The analysis device according to any one of Claims 11 to 19, wherein the reservoir (15) is confined by walls that are lined on the inside with a lining material that does not react with sulphur and/or nitrogen.

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21. The analysis device according to any one of Claims 11 to 20, wherein a conditioning unit (7) for conditioning the combustion products is fitted between the combustion chamber (2) and the measuring chamber (16, 30).

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22. The analysis device according to Claim 21, wherein the conditioning unit (7) comprises a tube (8) that is made of a material through which water can diffuse.

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23. The analysis device according to claim 22, wherein the material is a copolymer such as Nafion®.

24. The analysis device according to any one of Claims 11 to 23 comprising a gas source for continuously passing a gas through the analysis device.

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25. The analysis device according to Claim 24, wherein the gas comprises oxygen and/or an inert gas, such as argon.

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26. A method of analysing a sample, such as a fuel, comprising feeding the sample to a combustion chamber (2), the at least partial combustion of the sample in the combustion chamber (2) to combustion products, the removal of the combustion products from the combustion chamber (2), the feeding of the combustion products to a measuring chamber (16, 30) and the measurement of a component of the combustion products in the measuring chamber (16, 30), characterized in that the combustion products are removed from the combustion chamber (2) to a reservoir (15) in which the combustion products are collected, after which the collected combustion products are fed from the reservoir (15) to the measuring chamber (16, 30).

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27. An analysis device for analysing a sample, comprising a combustion chamber (2) for at least partially burning the sample to combustion products, which combustion chamber (2) has an inlet opening (3) for feeding the sample and has an outlet opening (5) for removing the combustion products, and also a chamber (16, 30) that is connected to the outlet opening (5) of the combustion chamber (2), wherein the measuring chamber (16, 30) has measurement means for measuring a component of the combustion products, characterized in that a reservoir (15) is provided for the temporary collection of combustion products, which reservoir is connected by a first connection (11) to the combustion chamber (2) and is connected by a second connection (14) to the measuring chamber (16, 30).